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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,487	12/29/2003	Hyung Keun Song	9717.23US01	1819
23552 7590 01/24/2007 MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			EXAMINER NGUYEN, CAM N	
			ART UNIT	PAPER NUMBER
			1754	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/24/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/750,487	<b>Applicant(s)</b> SONG ET AL.	
	<b>Examiner</b> Cam N. Nguyen	<b>Art Unit</b> 1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11/10/06 (an amendment/response).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 5-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on originally filed is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### Response to Amendment

1. Applicants' amendment and remarks, filed November 10, 2006 has been made of record and entered. Claims 1-2 & 5-6 have been amended. Claims 3 & 4 have been canceled. Claims 7 & 8 have been added.

Claims 1-2 & 5-8 are currently pending and under consideration.

### Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2 & 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clarkson et al., "hereinafter Clarkson", (US Pat. 6,919,290 B2) taken together with Voecks (PG-Pub No. US 2004/0206618 A1).

Clarkson discloses a process for activating a cobalt-containing catalyst by contacting the catalyst with hydrogen in a reactor system (see col. 7, claim 1).

Clarkson does not disclose conducting the process using non-thermal plasma technique. However, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have utilized such known "non-thermal plasma" technique as taught by Voecks to enhance or accelerate the catalytic reaction process in Clarkson because

Art Unit: 1754

Voecks teaches that the use of a non-thermal gas plasma environment is to enhance or accelerate a reaction that takes place in a catalytic system (see Voecks on page 1, paragraph [0006]).

**Response to Applicants' Arguments**

4. Applicants' amendment and remarks filed on November 10, 2007 has been fully considered, but not deemed persuasive for the following reasons.

Applicants urged, that "the Voecks reference is not available as a reference as the publication date for the Voecks application is October 10, 2004 that is nearly eleven months after the filing date of December 29, 2003 for the present application" (applicants's reponse on page 6, first paragraph). Upon carefully reviewed of the Voecks reference, it would appear that Voecks reference is still an applicable prior art because its earliest effective filling date is April 16, 2003, which is exactly one month prior to the earliest filling date of the instant application, which is May 16, 2003. The Voecks reference is qualified as a prior art under a 102(e) because of its earliest effective filling date as explained

Applicants' further urging on the Voecks reference for not teaching the claimed "non-thermal plasma" process has also been noted. Voecks clearly teaches a non-thermal plasma environment to enhance or accelerate a reaction that takes place in a catalytic system. The catalyst system, which is provided in a flow passage and includes a catalyst structure disposed in the flow passage and a non-thermal plasma generator for generating a non-thermal plasma in at least a portion of the catalyst structure (see Voecks at page 1, paragraph [0006]). It should be noted the rejection was made using a combination of the references together, and not individually. Therefore, applicants' urging on the Voecks reference for not teaching the claimed reducing step of reducing the catalyst with hydrogen containing gas under a non-thermal plasma

Art Unit: 1754

environment is not found persuasive. Even though Voecks reference does not teach reducing the catalyst with a hydrogen-containing gas under a non-thermal plasma environment, it fairly suggests using a non-thermal plasma generator device to generate non-thermal plasma environment in the catalyst bed in order to enhance the catalytic reaction taking place in the catalyst bed. Clarkson reference teaches a process for activating a cobalt-containing catalyst by contacting the catalyst with hydrogen in a reactor system (see Clarkson at col. 7, claim 1), which provides for the step of reducing the catalyst in the hydrogen containing gas as being claimed. It is considered there is a motivation to combine the teachings of the references together in view of the advantage that the non-thermal plasma generated by the non-thermal plasma generator device taught by Voecks would enhance and accelerate the reaction process of the catalyst activation of Clarkson. The rejection is therefore maintained.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

**Conclusion**

6. Claims 1-2 & 5-8 are pending. Claims 1-2 & 5-8 are rejected. No claims are allowed.

**Contacts**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Cam N Nguyen, whose telephone number is 571-272-1357. The examiner can normally be reached on M-F, 9:00 AM - 6:30 PM, at alternative work site.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**/Cam N. Nguyen/**

Nguyen/cnn

Primary Examiner

January 20, 2007

Art Unit: 1754